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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/512,128	08/22/2005	Ionel D. Jitaru	14609-0034	6913

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03/12/2007

EXAMINER

MAI, ANH T

ART UNIT

PAPER NUMBER

2832

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/12/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/512,128

Applicant(s)

JITARU ET AL.

Examiner

Anh T. Mai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 24-31 is/are rejected.
- 7) ☒ Claim(s) 22-23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                              |                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                         | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/04</u> | 6) <input type="checkbox"/> Other: ____                                                |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 31 is rejected under 35 U.S.C. 102(b) as being anticipated by Meinel et al. [5335001].

Meinel discloses:

- a multilayer circuit board 11 having first and second exterior faces;
- a plurality of magnetic segment 21, 22 extending through the board from one exterior face to the other exterior face;
- at least two magnetic elements 18, 20 exterior of the circuit board, each at one of the faces, and extending generally parallel to the faces of the board in flux conducting relation from one of the segments to another of the segments to form a single, closed, unbranched flux path [figure 2];
- at least one buried winding 12 carried on a surface of a layer of the multilayer circuit board intermediate the exterior faces and at least partially encircling one of the magnetic segments 21 as shown in figure 2 [Abstract].

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8, 10-21, 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meinel in view of Staszewski [5508673]. Meinel discloses:

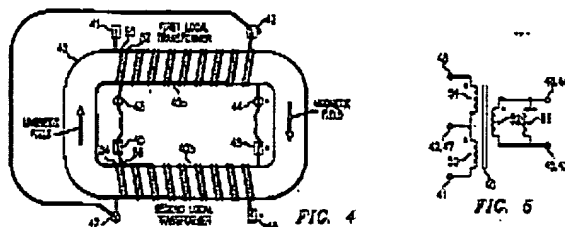
- a multilayer circuit board 11 having first and second exterior faces;
- a plurality of magnetic core arms 21, 22 penetrating the board;
- at least two flux- conducting magnetic elements 18, 20 extending between the magnet core arms one on each side of the circuit board;
- the core arms and core elements form a single, closed, unbranched flux path [figure 2];
- at least one buried winding 12 carried on a surface of a layer of the multilayer circuit board intermediate the exterior faces and at least partially encircling one of the magnetic segments 21 as shown in figure 2 [Abstract].

Meinel discloses the invention as claimed as cited above except for at least two series connected primary windings on the board in at least partially encircling relation to at least one of the arms and at least two parallel connected secondary windings on the board in at least partially encircling relation to at least one of the arms. Staszewski discloses two series connected primary windings 54, 50 on the board in at least partially encircling relation to at least one of the arms; and two parallel connected secondary windings on the board in at least partially encircling relation to at least one of the arms as shown in figures 4-5; the windings also have the same number of turns. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the windings as taught by Staszewski to the device as disclosed by Meinel. The motivation would have been to virtually eliminate effect of the high electrical

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coupling within localized transformers on the frequency characteristics [col 2, lines 1-3].

Therefore, it would have been obvious to combine Staszewski with Meinel.



With respect to claim 4, Meinel discloses circuit components 26A-C positioned on outer layer of circuit board 11 as shown in figure 2.

With respect to claims 10-12, 28-29, Meinel in view of Staszewski discloses the claimed invention except for the magnetic core arms and magnetic core elements exceed number of two. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide multiplicity of the cores and windings, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

With respect to claims 14-20, the claims are method counterpart of structure claims 1-8 and methods steps therefore inherent for manufacturing a transformer comprising windings being formed on various surfaces of the printed circuit board.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meinel in view of Staszewski as applied to claim 2 above, and further in view of Wolf et al. [6650217].

Meinel in view of Staszewski discloses the invention as claimed as cited above except for the core of group consisting of C/I core. Wolf discloses transformer of I-core 16 and C-core 12 as shown in figure 2a. At the time of the invention, it would have been obvious to a person of

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ordinary skill in the art to use C/I cores as taught by Wolf to the transformer as disclosed by Meinel in view of Staszewski. The motivation would have been to provide a closed flux loop. Therefore, it would have been obvious to combine Wolf with Meinel further in view of Staszewski.

*Allowable Subject Matter*

6. Claims 22-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 22 recites inter alia, *transformer secondary output processing circuitry connected to the parallel-connected windings, each parallel-connected winding having substantially the same output processing circuitry- connected thereto for similarly processing each parallel-connected winding output, the output processing circuitry being located between the parallel- connected windings and a point of interconnection thereof.*

The references of record do not teach or suggest the aforementioned limitation, nor would it be obvious to modify those references to include such limitation.

*Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 Form.

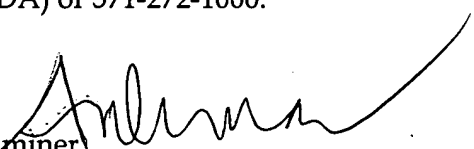
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh T. Mai whose telephone number is 571-272-1995. The examiner can normally be reached on 5/4/9 Schedule.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anh T. Mai  
Primary Examiner  
Art Unit 2832



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